

## RESEARCH ARTICLE

# Economic insecurity and compliance with the COVID-19 restrictions

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## Abstract

The present research investigates economic insecurity as one potential determinant of citizens' compliance with restrictive policies implemented to combat the spread of the COVID-19 virus. Two pre-registered studies ( $N_{\text{Study 1}} = 305$ ;  $N_{\text{Study 2}} = 175$ ) were conducted in France during the second and the third wave of the pandemic to test correlational (Study 1) and causal (Study 2) links between economic insecurity, perceived constraints, and transgressions (self-reported, Study 1; intended, Study 2). We hypothesized that the effect of economic insecurity is particularly strong for restrictions involving social affiliations (e.g., not meeting with friends and families). Results indicated that economic insecurity indeed increases perceived constraints and the tendency to transgress but for all types of restrictions (involving social affiliation or not). We propose that economic insecurity poses a threat to individuals' self-agency, which triggers psychological reactance to any form of restrictions on individual freedom.

## KEYWORDS

compliance, COVID-19, economic insecurity, reactance, social affiliation

## 1 | INTRODUCTION

To fight against the COVID-19 pandemic, most countries implemented restrictive policies to break the spread of the virus. Those policies evolved over time and across countries from “soft” (e.g., washing hands, wearing masks) to “hard” measures (e.g., closing borders, curfews, and lockdowns). Although following recommendations was strongly encouraged and disobedience may even be fined, the success of these restrictive policies ultimately depended on citizens' compliance. Unfortunately, the exceptional pandemic went together with an exceptional economic recession, thereby aggravating the climate of uncertainty and threat. The present research aims to examine whether economic insecurity undermines citizens' compliance with the restrictive policies aiming to contain the virus transmission.

### 1.1 | Psychological predictors of compliance with restrictive policies

A growing amount of research in psychology has attempted to identify the psychological mechanisms that underlie individuals' adoption

of prescribed and recommended behaviours to curb the risk of getting infected and transmitting the SARS-CoV-2 virus. Among them, the belief in conspiracy theory seems to hold an important place. Numerous correlational studies suggest that stronger endorsement of conspiracy beliefs regarding COVID-19 is negatively related to compliance with restrictive policies (Bierwaczek et al., 2020; Freeman et al., 2020; Imhoff & Lamberty, 2020). This negative association seems to be increased by a lower level of anxiety about the risks related to the pandemic (Erceg et al., 2020), right-wing political attitudes (Farias & Pilati, 2021) and vertical individualism (i.e., viewing oneself as an autonomous individual who accepts inequality) (Biddlestone et al., 2020). Other research reported that risk tolerance (Müller & Rau, 2021) and lower levels of political trust (Bargain & Aminjonov, 2020) negatively affect compliance with social distancing and lockdown prescriptions.

Despite acknowledging that the socio-economic climate played an undeniable role in the aforementioned psychological factors, so far, little research has been conducted to specifically examine how economic stressors may affect compliance with restrictive policies. To this matter, Probst et al. (2020) recently collected responses from US workers across 43 states and found that economic insecurity (i.e., job and financial insecurity) was negatively correlated to self-reports of compliance

with COVID-19 prevention behaviours. The more participants experienced economic insecurity, the lower their compliance with the recommended prevention behaviours was (e.g., physical distancing, staying at home, disinfecting items and surfaces, washing hand frequently, avoiding touching one's face, and coughing inside one's elbow or in a tissue). Drawing on scarcity theory (Mani et al., 2013; Mullainathan & Shafir, 2014), authors interpreted this relationship as a result of a cognitive impairment caused by economic vulnerability. Scarcity theory posits that dealing with a lack of valued resources (e.g., time, food, money) induces a temporary mindset that consumes cognitive resources. With fewer cognitive resources available when engaging actions, individuals with a scarcity mindset would be less able to make appropriate decisions and to exert self-control while focusing on the most urgent and pressing needs. With regard to the COVID-19 pandemic, dealing with economic insecurity and having to anticipate the consequences of potential job or income losses could have translated into less cognitive resources to comply effectively with the prescribed and recommended health-related behaviours. Importantly, Probst et al. (2020) also found that the negative relationship between economic insecurity and self-reports of compliance with prevention behaviours was attenuated in US states offering more generous unemployment benefits. In other words, knowing that they have a safety net in case of job loss could contribute to relieving US employees from economic insecurity worries, thereby preserving cognitive resources.

However, in their study, Probst et al. (2020) focused on six behaviours that involved only personal and respiratory hygiene (e.g., hand washing, disinfection of surfaces, coughing inside one's elbow). Those behavioural recommendations all belong to the category of "soft" policies compared to harder policies that were implemented in many countries such as curfews and lockdowns. These policies are considered "hard" since they curtail individuals' freedom of action regarding their personal and, more importantly, social life. Not only are they more constraining but they are also distinct in nature from the "soft" policies. In fact, not being allowed to assist social gathering or to visit family members affects the social dimension of an individual's life. And with this difference in nature may come differences in the psychological processes that underlie their compliance. While it seems plausible that forgetting to wash one's hands systematically after contact with potentially contaminated surfaces may result from a temporary lack of cognitive resources (due to a scarcity mindset), the same rationale hardly extends to getting involved in social gatherings (but see Xie et al., 2020 for a different contention). Not complying with "hard" restrictive policies could emanate from making a deliberate decision rather than from cognitive lapses. For this matter, whether economic insecurity plays a role in compliance with restrictive social policies remains an open question.

## 1.2 | Economic insecurity and compliance with restrictive social policies

The phenomenon of social affiliation in situations of stress is well known in psychology (Gump & Kulik, 1997; Schachter, 1959) and

despite competing theories on its determinants, there is a large consensus about its existence (Baumeister & Leary, 2017). Indeed, the experience (or anticipation) of a stressful and ambiguous situation increases the need to affiliate with people who share the same experience in order to exchange information and attitudes that help mitigate the anxiety associated with the unpredictability of the situation. Economic insecurity arises from the experience of uncertainty regarding one's employment and financial resources (Probst, 2005), which makes this situation particularly likely to increase the need for social affiliation. Moreover, the pandemic and its economic collateral damages altogether combine to produce a very stressful context, as attested to by the impact on individuals' well-being and mental health (Holmes et al., 2020; Martinelli et al., 2021). For those who do not benefit from stable employment status or whose professional activity directly suffers from the consequences of the pandemic, uncertainty and stress may be at their highest peak. One basic and instinctive way to cope with stress is to seek for social contacts, and preferably with similar or close others (Taylor, 2011). And that is precisely what was strongly recommended not to do during periods of lockdown. Coping with stressful situations would therefore directly enter in conflict with the restrictive social policies that are necessary to contain propagation of the virus.

### 1.2.1 | Purpose of the present research

The objective of the present research is to examine the role of economic insecurity in individuals' compliance with restrictive policies. The two pre-registered studies (Study 1: <https://doi.org/10.17605/OSF.IO/CG3KS>; Study 2: <https://doi.org/10.17605/OSF.IO/G3HDZ>) were conducted in France during the second and the third wave of the COVID-19 pandemic in 2020. We tested the hypothesis that experiencing economic insecurity is associated with the perception of restrictive policies as more constraining and with a greater tendency to transgress them. In addition, in both studies, the nature (social vs. non-social) of the restrictions is tested as a within-participants variable: the association between economic insecurity and perceived constraint and intention to transgress was expected to be particularly true for "social" restrictions, namely, restrictions that deprive people of face-to-face interaction with others (e.g., not meeting with friends and families). The full materials, including data and scripts, are available on [https://osf.io/s5qr8/?view\\_only=16786ba0b51f4e2ca2e0d52652ea8ee8](https://osf.io/s5qr8/?view_only=16786ba0b51f4e2ca2e0d52652ea8ee8). In both studies, we report how we determined our sample size, all data exclusions, all manipulations, and all measures (Simmons et al., 2012).

## 2 | STUDY 1

Study 1 was run during the second lockdown in France, starting from 30 October 2020, which involved several measures and policies restraining citizens' mobility. Residents were allowed to go outdoors only for essential needs (e.g., doing groceries, going to a medical appointment). Except for imperative family reasons (e.g., picking up one's child from school), social contacts with friends and family members were not

an exempting condition. On 24 November, the French government announced that the lockdown would be eased in three progressive steps, starting on 28 November. Study 1 was then run from 30 November to 8 December and involved questions regarding the past four weeks in November that took place under lockdown.

## 2.1 | Method

### 2.1.1 | Participants and sample size

We conducted an a priori power analysis on the basis of an effect size of  $d = 0.40$  ( $f^2 = 0.04$ ), which constitutes our smallest effect size of interest (SESOI; Lakens et al., 2018). Our SESOI was established by averaging the effect sizes of the correlations between compliance with CDC guidelines and two different predictors of economic insecurity (job and financial insecurity) reported by Probst et al. (2020). The power analysis using G\*power (Faul et al., 2007) indicated that 265 participants are required to have 90% chances to detect an interaction effect of a  $f^2 = 0.04$  size. We planned to oversample and recruit around 300 participants. Three hundred and five French participants (207 women, 96 men, and 2 undefined) were recruited online through social media and large email diffusion ( $M_{\text{age}} = 38.83$ ;  $SD_{\text{age}} = 13.109$ ) and took part on a voluntary basis.

### 2.1.2 | Measures

#### *Economic insecurity*

Economic insecurity was assessed with the Affective Financial Stress measure (Petitta et al., 2020) composed of four Likert scale items translated into French by a bilingual researcher. Participants indicated on a 5-point frequency scale ranging from 1 "Never" to 5 "Always" how often they experienced worries and concerns related to their current financial situation ( $\alpha = 0.913$ ;  $M = 2.565$ ;  $SD = 1.188$ ).

#### *Perceived constraints*

Based on the measures that were applicable during the November 2020 lockdown in France, a list of 11 items related to restrictive policies was created. Participants indicated to what extent each item was inconvenient to them on a 100-point scale ranging from 1 "Not inconvenient for me at all" to 100 "Extremely inconvenient for me" ( $\alpha = 0.832$ ;  $M = 53.488$ ;  $SD = 20.882$ ). Five of the items were a priori categorized as social, as they clearly involve social restrictions (e.g., "Not being able to visit family, friends and acquaintances";  $\alpha = 0.784$ ;  $M = 61.313$ ;  $SD = 24.375$ ), while the other six items were categorized as non-social, as they did not primarily involve social restrictions (e.g., "Not being able to buy anything I want";  $\alpha = 0.707$ ;  $M = 46.966$ ;  $SD = 22.262$ ).

#### *Self-reported transgressions*

Based on the measures that were applicable during the November 2020 lockdown in France, a list of 13 non-recommended or pre-

scribed behaviours, a priori defined as social or non-social, was created.<sup>1</sup> Participants indicated how often they exerted each behaviour during the 4-week of lockdown using a 7-point Likert scale (i.e., 1 "Never", 2 "Only once the past 4 weeks", 3 "two to three times the past 4 weeks", 4 "Between 4 and 7 times the past 4 weeks (approximately once a week)", 5 "Between 8 and 15 times a week the past 4 weeks (2 to 3 times a week)", 6 "16 to 20 times for the past 4 weeks (approximately 4 times a week)", 7 "More than 20 times over the past 4 weeks (almost every day or more)";  $\alpha = 0.784$ ;  $M = 2.059$ ;  $SD = 0.755$ ). Nine behaviours involved social contacts (e.g., "Invite family or friends to come over at my home";  $\alpha = 0.805$ ;  $M = 2.068$ ;  $SD = 0.924$ ) and the other four behaviours did not primarily involve social contact (e.g., "Going outdoor for a walk for more than 1-hour";  $\alpha = 0.423$ ;  $M = 2.097$ ;  $SD = 0.907$ ).<sup>2</sup>

### 2.1.3 | Procedure and design

After giving consent, participants first responded to the economic insecurity measure, followed by the perceived constraints and the self-reported transgressions measures. The design of the study is correlational with factors of interest being economic scarcity, perceived constraints (social vs. non-social) and self-reported transgressions (social vs. non-social). We predicted that economic insecurity positively correlates with perceived constraints and self-reported transgressions, but more specifically with the ones involving social contacts.

## 2.2 | Results

### 2.2.1 | Correlation matrix and preliminary analyses

Preliminary analyses (see Table 1) indicated that gender was significantly related to most of the dependent variables (see [Supplementary Material](#)) and was therefore included as a covariate in further analyses. Data were analysed using mixed-ANCOVA (General Linear Model).<sup>3</sup> The model tested whether economic insecurity predicted perceived constraints and transgressions of various restrictions. The social versus non-social nature of the constraints and transgressions were tested as within-participants variables.

<sup>1</sup> We also measured independent and interdependent self-construals to test their association with perceived constraints and transgressions of the restrictive policies. But the poor internal consistency of the scale ( $\alpha = 0.616$ ), as well as the unexpected factorial structure (11 factors instead of two), prevented us from running the analyses. One other measure regarding the maximum number of guests participants thought it was reasonable to gather with on Christmas Eve was initially included in the study. However, while data collection was still going on, the French government gave recommendations on 3 December to limit Christmas Eve family reunion to six adults. These non-exploitable measures will not be discussed further in the present article but are available on OSF.

<sup>2</sup> Given the low reliability of the non-social transgression scale ( $\alpha = 0.423$ ), a factorial analysis with an oblimin rotation was performed and four components emerged. Analyses run on those four components rather than the two a priori dimensions (social vs. non-social policies) led to similar results (see [Supplementary Material](#)).

<sup>3</sup> All reported effects are maintained when gender is not entered in the analyses.

**TABLE 1** Correlation matrix of all variables involved in Study 1

| Variable                     | 1                          | 2                          | 3                          | 4                       | 5                       | 6                       | 7                       |
|------------------------------|----------------------------|----------------------------|----------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| 1. Education                 |                            |                            |                            |                         |                         |                         |                         |
| 2. Gender                    | −0.052<br>[−0.17, 0.06]    |                            |                            |                         |                         |                         |                         |
| 3. Insecurity                | −.208***<br>[−0.32, −0.10] | −0.030<br>[−0.14, 0.08]    |                            |                         |                         |                         |                         |
| 4. Income                    | .305***<br>[0.20, 0.41]    | −0.049<br>[−0.16, 0.06]    | −.409***<br>[−0.52, −0.31] |                         |                         |                         |                         |
| 5. Non-social constraints    | −0.017<br>[−0.13, 0.10]    | −.131*<br>[−0.24, −0.02]   | .172**<br>[0.06, 0.28]     | −0.005<br>[−0.12, 0.11] |                         |                         |                         |
| 6. Social constraints        | 0.067<br>[−0.05, 0.18]     | −.226***<br>[−0.34, −0.12] | .126*<br>[0.01, 0.24]      | −0.006<br>[−0.12, 0.11] | .616***<br>[0.53, 0.70] |                         |                         |
| 7. Non-social transgressions | 0.050<br>[−0.06, 0.16]     | .129*<br>[0.02, 0.24]      | 0.106<br>[−0.01, 0.22]     | −0.051<br>[−0.16, 0.06] | .286***<br>[0.18, 0.39] | .146*<br>[0.03, 0.26]   |                         |
| 8. Social transgressions     | 0.071<br>[−0.04, 0.17]     | −0.039<br>[−0.15, 0.07]    | .120*<br>[0.01, 0.23]      | −0.027<br>[−0.13, 0.08] | .191***<br>[0.08, 0.30] | .185***<br>[0.07, 0.30] | .382***<br>[0.28, 0.49] |

Note. Values in square brackets indicate the 95% confidence interval for each correlation.

\* $p < .05$ .

\*\* $p < .01$ .

\*\*\* $p < \text{or} = .001$ .

## 2.2.2 | Perceived constraints

Participants significantly perceived restrictive social policies as more constraining than non-social policies,  $F(1, 300) = 83.639, p < .001, \eta_p^2 = 0.227$ , 90% CI [0.153; 0.282]. Moreover, the main effect of economic insecurity indicated that the more economically insecure participants felt, the more they perceived all kinds of restrictive policies as constraining,  $F(1, 300) = 8.038, p = .005, \eta_p^2 = 0.026$ , 90% CI [0.005; 0.062]. However, economic insecurity did not interact with the nature (social vs. non-social) of restrictive policies ( $F < 1$ ). Contrary to our prediction, economic insecurity was not associated with the perception of restrictive social policies as more constraining than non-social ones.

## 2.2.3 | Self-reported transgressions

Participants did not report transgressing more social than non-social restrictions,  $F(1, 300) = 2.169, p = .142$ . The main effect of economic insecurity was significant,  $F(1, 300) = 5.853, p = .016, \eta_p^2 = 0.019$ , 90% CI [0.002; 0.052], meaning that the more economically insecure participants felt, the more they reported transgressing all types of restrictive policies. However, economic insecurity did not interact with the nature (social vs. non-social) of restrictive policies ( $F < 1$ ). Contrary to our prediction, economic insecurity was not associated with a greater tendency to transgress restrictive social policies than non-social ones.

## 2.3 | Discussion

We hypothesized that the economic insecurity engendered by the consequences of the COVID-19 pandemic would enhance individuals' need for affiliation (Gump & Kulik, 1997; Schachter, 1959), which would motivate individuals to seek social contact (Martinelli et al., 2021) despite the restrictions imposed to curb the virus transmission. Accordingly, our main prediction was that experiencing economic insecurity would be associated with the perception of restrictive social policies as more constraining and with a greater self-reported tendency to transgress them than non-social ones. Our results support the hypothesis that economic insecurity is related to poor compliance with the restrictions. However, they did not support a moderation of this association by the nature of the restrictions. Indeed, economic insecurity was related to greater perceptions of constraints and greater reports of transgression for both social and non-social restrictions.

Thus, results from Study 1 confirm that the more participants felt economically insecure, the more they perceived the (social and non-social) restrictions as constraining, and the more likely they were to transgress restrictive policies. However, Study 1's material suffers from some limitations. In line with the November 2020 lockdown in France, two lists of social and non-social restrictive policies were created. A posteriori, the categorization of some of the non-social items seemed problematic. For example, "being restricted in one's mobility" could easily fall into the "social constraints" category if individuals usually travel to visit family or friends. The same logic applies to "not being able to do indoor sport" that can represent both social and non-social

contexts. Since most of the items could eventually be social in nature, findings from Study 1 leave open the possibility that the social nature of the restrictions increases the association between economic insecurity, perceived constraints and transgressions of these policies.

In Study 2, the distinction between social and non-social measures was clearer. In addition, while most studies on the determinants of individuals' compliance with COVID-19 restrictive policies are correlational, Study 2's design was experimental and tested the causal role of economic insecurity. More precisely, we designed a manipulation procedure that aimed to put participants either in an economic security or insecurity mindset before reporting how constraining they perceived the restrictions to be and how often they planned to transgress them.

We hypothesized that participants who are led to feel economically insecure should perceive restrictive policies as more constraining and should be more willing to transgress them than participants led to feel economically more secure. In Study 1, this main effect was not moderated by the social (vs. non-social) nature of the restrictions. Thus, in Study 2, two alternative pre-registered hypotheses were tested. On the one hand, with the dichotomy between social and non-social restrictions being clearer, and in line with our initial hypothesis, we expected the above effect to be stronger for social restrictions than for non-social restrictions. On the other hand, if the results from Study 1 were not due to the ambiguity of the items used, a main effect of the economic insecurity condition should be observed on both perceived constraints and self-reported transgressions, irrespective of their social nature.

### 3 | STUDY 2

After a series of local lockdowns, the French government announced a third national lockdown starting from 3 April 2021. Study 2 was launched on 8 April, soon after this announcement. Since the lockdown had just started, Study 2 did not measure self-reported past transgressions but rather intentions to transgress the restrictions that were in force at that time. On 22 April, the French government announced that the lockdown would be eased in the following days. As a consequence, data collection was stopped on 23 April.

#### 3.1 | Method

##### 3.1.1 | Participants and sample size

We conducted a power analysis using the smallest effect size detected in Study 1 (i.e.,  $f^2 = 0.01$ ), which constituted our smallest effect size of interest to detect the predicted interaction effects. The a priori power analysis using G\*power (Faul et al., 2007) indicated that 262 participants were required to achieve 90% chances to detect an effect of this size in a design involving within- and between-participant comparisons as well as their interaction. Since we had access to a large pool of participants through course credit (i.e., students from two French universities), we initially planned to oversample and recruit 300 par-

ticipants. Unfortunately, data collection had to be stopped before we reached the target sample size due to the lifting of the lockdown, making our dependent variables obsolete. As a consequence, we were able to collect responses from 180 participants. One of them was exposed to both conditions due to a program failure and three of them failed the attention check measure and were excluded from analyses. The final sample was  $N = 175$  participants (161 women, 13 men, 1 who did not wish to answer the question;  $M_{\text{age}} = 20$ ;  $SD_{\text{age}} = 2.591$ ). The sensitivity power analysis assuming 90% power indicates that we were only able to detect an interaction effect of a size greater than  $f^2 = 0.015$  with our final sample size.

##### 3.1.2 | Measures

###### *Perceived constraints*

The items list from Study 1 was adjusted and updated as a function of the official measures that were applicable during the April 2021 lockdown in France (see [Supplementary Material](#)). Participants' mean ratings of inconvenience was calculated for policies a priori categorized as social policies ( $M = 73.059$ ;  $SD = 20.809$ ;  $\alpha = 0.790$ ) and non-social policies ( $M = 54.909$ ;  $SD = 21.807$ ;  $\alpha = 0.767$ ).

###### *Intentions to transgress*

The item list from Study 1 was adjusted and updated as a function of the official measures that were applicable during the April 2021 lockdown in France. For each item, participants indicated how frequently they intended to exert the behaviour on a 7-point Likert scale ranging from 1 "Never" to 7 "Several times in a week" (see [Supplementary Material](#)). For one item ('moving outside of your county for non-essential trips and involving only you or your family'), participants indicated how likely they were to exert the behaviour on a 7-point Likert scale ranging from 1 "No, I do not plan on doing it all" to 7 "Yes I will". Participants' mean intention to transgress was calculated for items a priori categorized as social policies ( $M = 3.582$ ;  $SD = 1.436$ ;  $\alpha = 0.862$ ) and non-social policies ( $M = 2.802$ ;  $SD = 1.010$ ;  $\alpha = 0.532$ )<sup>4</sup>.

###### *Manipulation check*

At the end of the study, participants were asked to indicate to what extent the affirmation "I am currently worried and stressed by my economic and professional future situation by reason of the COVID-19 crisis" was true for them on a 7-point Likert scale ranging from 1 "Absolutely not true for me" to 7 "Absolutely true for me."

##### 3.1.3 | Procedure and design

After giving consent, participants were told that the study aimed to collect students' experience of the pandemic. They were randomly

<sup>4</sup> Given the low reliability of the non-social transgression scale ( $\alpha = 0.532$ ), a factorial analysis with an oblimin rotation was performed and four components emerged. Analyses run on those four components rather than the two a priori dimensions (social vs. non-social policies) led to similar results (see [Supplementary Material](#)).

assigned to one of the two experimental conditions of 2 (Economic situation induction: insecurity vs. security)  $\times$  2 (Perceived constraints: social vs. non-social measures)  $\times$  2 (Intentions to transgress: social vs. non-social measures) mixed design, with the economic situation induction as a between-participants variable and the two others as within-participant variables. Participants in the “economic insecurity” condition ( $N = 94$ ) were first reminded that the COVID-19 crisis was going to result, in the years to come, in a major economic crisis with negative consequences on the job market. Participants in the “economic security” condition ( $N = 81$ ) were first reminded that the COVID-19 crisis had some negative social and psychological repercussions and that, for these reasons, more jobs will be available in the psychology job market. Next, all participants were given as much time as needed to express their thoughts by writing down any things that worry (insecurity condition) or reassure (security condition) them as a student, on both the financial and professional dimensions related to the COVID-19 crisis. Then, they completed both measures of perceived constraints and intentions to transgress. They also completed socio-economic and biographical measures as well as the attention and the manipulation check items. Finally, participants were thanked and debriefed.

## 3.2 | Results

Mixed-ANOVA (General Linear Model) was used to analyse the data. As in Study 1, the social versus non-social nature of the constraints and transgressions were tested as within-participant variables.

### 3.2.1 | Manipulation check

Participants in the economic insecurity condition reported higher levels of economic and professional related worries and stress due to the COVID-19 crisis ( $M = 4.74$ ;  $SD = 1.772$ ) than participants in the economic security condition ( $M = 3.96$ ;  $SD = 2.015$ ),  $F(1, 173) = 7.458$ ,  $p = .007$ ,  $\eta_p^2 = 0.041$ , 90% CI [0.006; 0.099]. Our manipulation seems to have been effective.

### 3.2.2 | Perceived constraints

Participants perceived restrictive social policies as more constraining than non-social policies,<sup>5</sup>  $F(1, 173) = 129.346$ ,  $p < .001$ ,  $\eta_p^2 = 0.428$ , 90% CI [0.337; 0.502]. However, neither the main effect of the economic situation induction nor the interaction with the nature of perceived constraints reached significance (all  $F_s < 1$ ).

### 3.2.3 | Intention to transgress restrictive policies

Participants indicated greater intention to transgress social policies than non-social policies,  $F(1, 173) = 59.743$ ,  $p < .001$ ,  $\eta_p^2 = 0.257$ , 90% CI [0.168; 0.340]. The main effect of the economic situation induction was also significant,  $F(1, 173) = 4.472$ ,  $p = .036$ ,  $\eta_p^2 = 0.025$ , 90% CI [0.001; 0.075]. Replicating results of Study 1 with an experimental design, participants in the economic insecurity condition indicated greater intentions to transgress both types of restrictive policies ( $M = 3.295$ ;  $SD = 1.035$ ) than participants in the economic security condition ( $M = 2.936$ ;  $SD = 0.938$ ). Contrary to our initial hypothesis, the interaction of economic insecurity condition with the social nature of restrictions failed to reach significance [ $F(1, 173) = 2.882$ ,  $p = .095$ ]. The effect of the economic (in)security condition on intentions to transgress did not depend on the type of restrictive policies involved (social vs. non-social).

## 3.3 | Discussion

Study 2 aimed to test the same hypotheses as in Study 1 by manipulating, instead of measuring, economic insecurity. In line with Study 1's results, we found that participants who were led to reflect on the negative economic outcomes the COVID-19 crisis might have on their future economic situation intended to transgress restrictive policies (both social and non-social) to a greater extent than participants who were led to reflect on the potential positive economic outcomes of the crisis for their economic future. We also attempted to test the predicted interaction, which failed to reach significance in Study 1, that participants exposed to a highly insecure economic future would perceive as more constraining and would intend to transgress more restrictive social than non-social policies. Once again, analyses did not reveal such an interaction effect. Indeed, although social restrictions are perceived as more constraining and are more likely to be transgressed than non-social policies, these effects were not moderated by the economic insecurity condition. The early stop in data collection resulted in a lower statistical power than expected, and could explain the non-significance of the interaction. However, this interaction was not observed in Study 1 either. In addition, the fact that the main effect of insecurity was significant, consistently with Study 1, sustains the hypothesis that, all things being equal, higher economic insecurity is associated with lower compliance with any prescriptions, both social and non-social ones.

## 4 | GENERAL DISCUSSION

The present research aimed to examine how the experience of economic insecurity in the COVID-19 crisis influenced individuals' compliance with the mitigation measures that were recommended and prescribed in many countries. Two studies were conducted to test the correlational (Study 1) and the causal (Study 2) links between economic insecurity, perceived constraints and self-reported

<sup>5</sup> With most participants being women, gender was then not a relevant covariate. Other potential covariates were found to be unrelated to our dependent variables of interest in Study 1 (see [Supplementary Material](#)). Therefore, no covariate has been included in the analysis.

past transgressions (Study 1) as well as intentions to transgress (Study 2).

In line with Probst et al. (2020), the results of the two studies show that economic insecurity may explain part of citizens' non-compliance with COVID-19 restrictive policies. Indeed, the more economically insecure participants felt, the more likely they were to report past (Study 1) or future (Study 2) transgressions. A major strength of our work lies in the causal nature of the effect of economic insecurity (Study 2), which qualifies previous correlational findings and support the hypothesis that, beyond other factors, the mere temporary feeling of economic insecurity was sufficient to increase transgressions of the COVID-19 restriction policies.

Among those restriction policies, some involved a social component (e.g., "Invite family or friends to come over at my home") while others did not (e.g., "Not washing hands before going outdoors"). Our rationale was that the experience of economic insecurity constitutes a highly stressful and uncertain situation which enhances individuals' need for social affiliation. Our main hypothesis was that economic insecurity would lead individuals to seek social contacts, which would translate into (1) perceiving social restrictions as more constraining than non-social restrictions and (2) a greater tendency or intent to transgress social than non-social restrictions. Results of both studies supported the hypothesis that social restrictions were perceived as more constraining and were more often transgressed than non-social restrictions, sustaining the view of these restrictions as "hard" (vs. "soft") restrictions. However, results did not support the moderation hypothesis. Indeed, economic insecurity was related to a perception of both types of restrictions as more constraining (Study 1) and to a greater tendency or intent to transgress both types of restrictions (both studies). It is worth noting that the absence of the predicted interaction in Study 2 may also be partly caused by a lack of statistical power to detect a small-sized effect, given that data collection had to be stopped right after the announcement of the lifting of the lockdown. Its absence is nevertheless congruent with the results from the well-powered Study 1.

Incidentally, Study 1's additional analyses indicated gender differences in perceived magnitude of constraints depending on their nature: women (but not men) perceived restrictive social policies as more constraining than non-social ones and men reported more transgressions than women, particularly non-social policies. Study 2's sample characteristics (i.e., psychology students, among whom men are very much underrepresented) did not allow further investigation of gender effects in compliance with social restrictions. Gender did not moderate the link between economic insecurity and perceived constraints or self-reported transgressions evidenced in Study 1. However, beyond economic insecurity, the question of whether gender may affect perceptions of social and non-social restrictive policies as well as compliance with these restrictions would be worth investigating in future research.

At first glance, the consistent and positive main effect of economic insecurity on (self-reported past and intended future) transgressions could seem surprising given that insecure individuals are those who may suffer the most from the crisis, and thus, would be expected to comply with the restrictions in order to limit the spread of the virus.

However, and contrary to that assertion, results support the hypothesis that they are those who (actually or intend to) transgress the restrictions the most. The reasons why economic insecurity diminishes individuals' compliance with all types of restrictive policies would deserve attention. Probst et al. (2020) have suggested that economic insecurity triggers a scarcity mindset, which consumes part of the cognitive resources necessary to deal with the restrictive policies (e.g., washing hands frequently, disinfecting surfaces and objects, etc.). Our initial argument was that a scarcity mindset might not be the best candidate to account for diminished compliance with social restrictions (e.g., getting involved in social gatherings, inviting friends to come over one's home). Instead, we suggested that, in an attempt to cope with the stress and uncertainty related to economic insecurity, individuals would feel an increased need for social affiliation (Schachter, 1959) and would therefore seek more social contacts despite the restrictive official recommendations. In the end, our findings suggest that economic insecurity decreases compliance with all forms of restrictive policies, and not only the ones that prevent social contact, which cannot be accounted for by an increased need for social affiliation. Unless one assumes that a scarcity mindset can equally result in failures to remind oneself to wash hands and in failures to avoid meeting up with friends or family, the present findings leave alternative explanations open.

As an aggravating factor, economic insecurity may have emphasized the threat that individuals experienced during the pandemic situation (Jutzi et al., 2020). Individuals not only feared to get contaminated but also feared that their future professional and economic situation would be compromised. Because official restrictions and recommendations reduce individuals' freedom of action and thus their sense of agency, economic insecurity may encourage people to try to regain their freedom of action by using defensive strategies such as psychological reactance (Brehm & Brehm, 2013; Reiss et al., 2020). In support of this explanation, other recent research showed that individuals with high reactance expressed a decreased preference for security-related behaviour and were more inclined to break curfews set in several countries as a mitigation measure against the COVID-19 pandemic (Soveri et al., 2020; Zhu et al., 2020). Therefore, it seems plausible that economic insecurity poses a threat to individuals' self-agency, and individuals, in turn, adopt defensive strategies, such as reactance to restrictions to their individual freedom.

Economic insecurity could also be experienced as a consequence of unfair or poor management decisions made by the government that negatively impacted the job market. Indeed, procedural justice models predict that when individuals feel that they have been treated unfairly by an authority, they tend to comply less with the rules or norms established by the said entity, which is perceived as illegitimate (e.g., Murphy, 2017; Murphy & Tyler, 2008). Individuals experiencing an increase in economic insecurity could hold the government responsible and considered it even as illegitimate. This could explain the association observed between economic insecurity and compliance with official restrictions, especially in Study 1, the manipulation used in Study 2 being less likely to change justice perceptions (as it is based on the positive vs. negative impact of the crisis on the psychology-related job sector, rather than on the action of the government).

The present research further contributes to understanding the conditions under which citizens may be reluctant to comply with restrictions that are imposed (or highly recommended) in several countries across the world in a pandemic situation. While a great deal of research has focused on the negative role of belief in conspiracy theories, our findings, along with those from Probst et al. (2020), point to the aggravating role of economic insecurity in compliance with mitigation measures. Interestingly, economic insecurity is also a strong predictor of belief in conspiracy theories (Douglas et al., 2019; Mao et al., 2020). Further research is needed to better understand the central role that economic insecurity may play by leading people to want to regain control over their lives, which could further translate into greater adherence to conspiracy theories and defensive strategies such as reactance to restrictive policies. Given that many experts from all horizons predict that humanity will have to face major global challenges in the future (e.g., restrictions policies to limit global warming), investigating the impact of economic insecurity on citizens' compliance seems crucial.

Notably, the two reported studies were conducted in France, which tops social welfare spending ranking among OECD countries in terms of percentage of global domestic product (OECD, 2021). While Probst et al. (2020) found that the negative correlation between economic insecurity and self-reports of compliance with prevention behaviours was attenuated in US states offering more generous unemployment benefits, our findings indicate that economic insecurity still has a negative effect on compliance with official restrictions even in a country where the social welfare system is considered to be one of the most generous in the world.

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#### CONFLICT OF INTEREST

We have no conflicts of interest to disclose.

#### ETHIC STATEMENT

Ethics approval was provided by the Université Clermont Auvergne's Research Ethics Committee. Registration number: IRB00011540-2021-40.

#### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available at OSF at the following URL: [https://osf.io/s5qr8/?view\\_only=16786ba0b51f4e2ca2e0d52652ea8ee8](https://osf.io/s5qr8/?view_only=16786ba0b51f4e2ca2e0d52652ea8ee8).

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## SUPPORTING INFORMATION

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